

MISSOURI DEPARTMENT OF CONSERVATION

# WETLAND PLANNING INITIATIVE **Implementation Plan**

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# MISSOURI DEPARTMENT OF CONSERVATION WETLAND IMPLEMENTATION PLAN

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## Preface

The Missouri Department of Conservation (Department) looks forward to the next era in wetland conservation in Missouri through the implementation of a Wetland Planning Initiative (Initiative). This Initiative builds on the successes of the Department's 1989 Wetland Management Plan and charts a course that ensures current and future generations will have opportunities to appreciate, value, and enjoy the many benefits of wetlands. This charted course includes promoting and building upon the partnerships that have served as the foundation of wetland management and conservation in Missouri. It is a course that requires the Department to engage citizens and work with others to achieve wetland management and conservation goals.

The Initiative is described by the Wetland Strategic Guidance Document and this Wetland Implementation Plan. These documents are not a State of Missouri plan. They provide direction for the Department, which has no regulatory authority over wetlands, water quality, or water use.

The **Wetland Strategic Guidance Document** describes the Department's wetland conservation mission, vision, goals, and guiding principles. It also sets forth guidelines for decision making and implementation.

This **Wetland Implementation Plan** serves two purposes. First, through objectives and strategies, it provides guidance to meet the wetland conservation goals and details the tools and information needed for Department wetland management and conservation actions. Second, it is an invitation for partners to work with the Department on wetland conservation issues of mutual interest. It will be a "living" document that will be updated periodically to reflect stakeholder and partner input and adaptive improvements in short- and long-term strategies.

Together, the Strategic Guidance Document and the Implementation Plan will direct the Department's wetland management and conservation actions. They also will guide efforts to move forward with conservation partners, communities, and interested private landowners, on a voluntary basis, to conserve wetlands.

## Background

Wetlands are vital habitats that have been mostly eliminated or altered in Missouri. Wetland conservation partners have made great strides in restoring some of the 87% of Missouri's lost wetlands and improving the functioning of those that remain. The Missouri Department of Conservation (Department), other agencies, conservation organizations, agricultural producers, and private landowners have worked together to restore thousands of acres of wetlands on public and private land. These wetlands are recognized as continentally significant complexes for several suites of migrating birds and great places to recreate. At the same time, partners have

worked to ensure that wetland restoration efforts provide many social benefits such as improving water quality and lessening flood damage.

Wetland conservation activities in Missouri must continue to protect intact habitats, maintain those that have been restored, and take advantage of the opportunities to enhance and improve upon the efforts of previous conservationists. To that end, the Department's newly created Wetland Planning Initiative (Initiative) charts a course for wetland conservation and management that focuses on Department-managed wetlands and on working with partners to incorporate wetland conservation and management into lands that include local agriculture, businesses, and communities.

The Initiative is described in two documents: the Wetland Strategic Guidance Document and this Wetland Implementation Plan. Together, these documents will guide the Department's wetland conservation efforts.

The **Wetland Strategic Guidance Document**, a companion to this document, includes the Department's wetland conservation mission and vision -

**Mission:** To protect, restore, and enhance wetland ecological functions and values for multiple societal and natural resource benefits based on sound scientific principles, effective management, and public engagement practices.

**Vision:** To be a national leader in wetland conservation by using an adaptive framework and strong partnerships to meet the needs of wetland plants and animals, to garner public awareness and support for wetlands, and to promote recreational uses of these valued habitats.

The Department's overall approach to wetland conservation is further described by the goals, guiding principles, guidelines for implementation, and decision-making categories of the Wetland Strategic Guidance Document.

The **Wetland Implementation Plan** herein serves two purposes. First, through objectives and strategies, it provides detailed guidance to Department staff involved in wetland management and conservation activities. Second, it is as an invitation to engage partners in wetland conservation issues of mutual interest.

This Wetland Implementation Plan will be a "living" source of guidance. Although it includes a five-year schedule, the objectives and strategies will be revised periodically to reflect stakeholder and partner input, new information, new management concepts, changing landscapes, and ever-evolving citizen attitudes. The objectives and strategies are initial steps along the Initiative's course for statewide wetland conservation and short- and long-term management of regional wetland complexes and individual conservation areas.

## Goals, Objectives, and Strategies

The wetland conservation mission and vision of the Wetland Strategic Guidance Document will be achieved by taking a holistic approach to wetland conservation through the integration of six



interdependent goals. Three of the six goals explicitly acknowledge the ecological ties between the surrounding lands, health of wetland habitats, and plants and animals that depend on those habitats. The remaining three goals focus on social interactions and how wetland-related partnerships are underpinned by groups sharing a similar conservation ethic and made up of individuals that appreciate the benefits of wetlands.

The wetland conservation goals reflect the Department's commitment to manage the wetlands it holds in public trust and to provide opportunities for Missourians to use and enjoy wetlands and understand the ecological and social values of these diverse habitats. The objectives and strategies for the six goals will guide Department wetland management actions. They also will serve as the foundation from which the Department will engage stakeholders and partners in wetland conservation. The Department looks forward to working with stakeholders and partners to further refine, develop, and then implement the strategies outlined herein. The Department anticipates that working with stakeholders and partners will lead to identification of additional opportunities for wetland conservation.

**Goal 1. Functioning Watersheds** Maintain and improve ecological functions of Missouri stream-floodplain-watershed systems by integrating wetlands within lands that can include agriculture, businesses, and communities.

### **Water Stewardship and Wetlands**

Objective: Where practical, promote the restoration of more natural stream flow variations and hydrologic connections between streams and floodplains.

Strategy: Work with partners to assess and prioritize places and management strategies to promote the restoration of more natural stream-floodplain connectivity, stream flow variation, and watershed function.

Strategy: Assess and prioritize opportunities to take advantage of stream flow variation, habitats, and connectivity of Department-managed wetlands through management and area improvements, without negatively affecting land use on neighboring properties.

Strategy: Assess current and future water needs for Department wetland management.

Strategy: Make water management decisions on Department-managed wetlands that balance water uses while maintaining healthy ecological processes in streams and wetlands.

Strategy: Identify and prioritize locations for restoration and infrastructure enhancement with consideration of future water use and availability.

Objective: Manage wetlands to enhance processes that input, transport, assimilate, and output organic matter, sediments, nutrients, and food within stream-floodplain-watershed systems.

Strategy: Work with partners to assess and prioritize opportunities to improve water quality, reduce nutrient loading in streams and reservoirs, diminish storm water run-off, and reduce nonpoint-source pollution through recommended watershed practices.

Strategy: Incorporate wetland management practices that promote soil health by sequestering or cycling carbon, minimizing soil erosion, and decreasing soil degradation.

### **Flood Damage Reduction and Wetlands**

Objective: Support partner efforts to restore stream-floodplain-watershed system functions that lessen localized flood damage to communities, homes, farms, and other infrastructure.

Strategy: Work with partners to assess and prioritize places to design wetlands and implement watershed management practices that take advantage of floodplain features to reduce flood damage.

Strategy: Design infrastructure on Department-managed lands that reduces flood damage on those lands and those of neighbors.

**Goal 2. Healthy Wetlands** A diversity of habitats to meet the life history needs of wetland-dependent plants and animals, to support a variety of recreational experiences, and to provide ecological services beneficial to society.

### **Restoration, Renovation, and Management**

Objective: Provide a wide variety of wetland habitats throughout Missouri, including wet prairies and bottomland hardwood forests, among others.

Strategy: Work with partners to develop habitat restoration objectives that meet the life history needs of wetland-dependent plants and animals, support recreation, and provide ecological and societal benefits.

Strategy: Identify the next major renovations needed on existing Department-managed wetlands by assessing and prioritizing statewide infrastructure and habitat needs.

Strategy: Identify potential staffing and financial needs to support restoration and management of existing and newly restored wetlands.

Strategy: On Department-managed wetlands, balance system restoration, meet life history needs, and provide quality recreational experiences.

Strategy: Reduce invasive species that degrade wetland habitats and negatively affect native plants and animals.

Strategy: Respond to the impacts of a changing climate and weather patterns that could affect Missouri's wetlands and wetland-dependent plants and animals.

### **Wetland Complexes and Connectivity**

Objective: Manage multiple wetland areas as complexes to provide the mosaic and connectivity of habitats necessary to benefit wetland-dependent plants and animals and to improve stream-floodplain-watershed systems.

Strategy: Collaborate with private and public wetland owners and biologists to manage wetland complexes in a manner that complements the functions of stream-floodplain-watershed systems and meets the life history needs of wetland-dependent plants and animals.

Strategy: Enhance connectivity among streams, wetland complexes, other floodplain habitats, and uplands to ease movement and dispersal of plants and animals.

Strategy: Use the proximity and connections between wetlands and agriculture to support beneficial species like bats, birds, and invertebrates that contribute to pest control and pollination of agricultural crops and other plants.

**Goal 3. Thriving Plants and Animals** Resilient populations of wetland-dependent plants and animals that support high-quality recreational experiences and many ecological and social benefits

### **Developing Population Objectives**

Objective: Establish population objectives for key wetland-dependent species.

Strategy: Work with partners to conduct an assessment of population statuses of key wetland-dependent species.

Strategy: Set population objectives that account for population variability and may include a range of approaches including population objectives for specific species, focal species and guilds, or habitats depending upon the species under consideration.

Strategy: Adopt population objectives from regional or continental plans that converge with wetland management in Missouri.



### **Meeting Life History Needs**

Objective: Provide a sufficient distribution, quantity, and quality of wetland habitat types to enable key wetland-dependent species to fulfill life history needs.

Strategy: Work with partners to identify life history needs of wetland-dependent species and the limiting factors that likely affect populations.

Strategy: Use indices to estimate the habitat needed to meet the life history needs of wetland-dependent species.

Strategy: Monitor wildlife populations and manage habitats to minimize wildlife disease outbreaks.

### **Regulating Populations**

Objective: Recommend hunting and special use regulations to maintain game populations at levels that provide desired benefits and minimize social conflicts.

Strategy: Identify the importance and extent of waterfowl refuges on publicly managed wetlands that support migrating waterfowl and create quality recreational experiences.

Strategy: Review and update existing processes to address wildlife-human conflicts involving Canada geese and other wetland-dependent species.

Strategy: Recommend waterfowl hunting regulations that provide high-quality recreational experiences while achieving population objectives.

**Goal 4. Strong Partnerships** Citizens, landowners, communities, conservation organizations, and government agencies working together to support wetland conservation and the continued use and enjoyment of these diverse habitats.

### **Department Teams**

Objective: Achieve Initiative goals by maintaining or establishing teams to coordinate Department wetland management activities.

Strategy: Provide statewide Department wetland management guidance by redefining the Wetland Review Team as a statewide multi-divisional and multi-disciplinary Department Wetland Coordination Team charged with the following tasks:

- Develop a charter that defines team membership, roles and responsibilities.
- Facilitate implementation of this Initiative.

- Lead annual wetland reviews to promote a culture of continued learning and information sharing.
- Assist with scaling this Initiative to regional and local levels.
- Participate in any Department water-use guideline development that could potentially affect Department-managed wetlands.
- Develop a process to prioritize and estimate costs related to wetland design, wetland renovations, and capital improvements.
- Invite outside expertise as needed to participate in wetland reviews and provide technical expertise in Initiative implementation.
- Make recommendations regarding restoration opportunities

Strategy: Enhance wetland system features on existing Department-owned wetland areas by assigning temporary multi-divisional/disciplinary teams to assist with the design of major Department wetland renovations and development.

- Develop a charter that defines membership, roles and responsibilities.
- Evaluate the challenges, constraints, and opportunities based upon the wetland's landscape setting and alterations as well as public-use opportunities to frame renovation objectives.
- Make wetland design recommendations to achieve renovation and Initiative objectives.
- Directly apply learning from one renovation to the next to improve designs and efficiencies in development.
- Invite outside expertise as needed to improve renovation plans.

Strategy: Guide Canada goose population management decisions by resurrecting and redefining the Nuisance Urban Goose Implementation Team (NUGIT) as a multi-disciplinary Canada Goose Committee that focuses on the following tasks:.

- Establish a charter that defines committee membership, roles, and responsibilities.
- Oversee Department decisions regarding lethal removals, including recommending updates to established protocols as needed.
- Work with Outreach & Education Division to update and produce information for landowners and others regarding how to live with Canada geese.

Strategy: Provide statewide interdisciplinary perspectives to guide public engagement and communication actions necessary to achieve the six Initiative goals by formalizing the ad hoc Public Engagement Team that was established to guide public engagement activities.

- Develop a charter that defines team membership, roles and responsibilities and includes human dimensions, communications, education, wetland management, and public engagement experts.
- Maintain public accountability, transparency and trust, by developing public input approaches to support Initiative implementation.
- Support the Wetland Coordination Team and focus on integrating social system perspectives when implementing the Initiative.
- Lead education, outreach, and communication efforts focused on the three Initiative social goals
- Provide support to the Waterfowl Hunt Committee
- Identify opportunities to recruit and retain traditional and new audiences in wetland-related recreational activities

Strategy: Ensure high quality waterfowl hunting experiences on Department-managed wetland areas by maintaining the Waterfowl Hunt Committee to oversee the Department's Managed Waterfowl Hunt Program.

- Review the charter that defines committee membership, roles, and responsibilities.
- Provide Department staff a forum for shared learning on the best approaches to provide both refuge areas and places for high-quality recreational experiences on Department-managed wetlands.

### **Working with Partners**

Objective: Identify opportunities for collaboration to achieve stream-floodplain-watershed conservation and restoration in Missouri by establishing an interdisciplinary statewide task force with participation from agencies and partners directly involved with stream-floodplain-watershed management.

Strategy: Participate in the implementation of interstate programs in Missouri, including Joint Ventures, Missouri River and Mississippi River mitigation and restoration, Farm Bill programs, and watershed protection efforts.

Strategy: Assist in identifying acquisition, renovation, and restoration priorities that can be accomplished through partnerships.

Strategy: Participate in and support partner programs and practices that are complementary to Initiative goals.

Strategy: Prioritize North American Wetland Conservation Act grant applications and the generation of funding matches to support these projects.

Objective: Improve management of wetland complexes to benefit wetland dependent plants and animals by establishing interdisciplinary teams comprised of staff from the Department and other agencies, and private landowners involved with wetland management.

Strategy: Identify restoration, renovation, and acquisition priorities within wetland complexes on public and private lands.

Strategy: Coordinate wetland management and monitoring within these wetland complexes.

### **Supporting Wetland Conservation Organizations and Partnerships**

Objective: Build capacity of conservation organizations and partnerships that promote wetland conservation.

Strategy: Conduct an assessment of the capacity of Missouri's conservation organizations and existing partnerships that support wetland conservation.

Strategy: Use the results of the assessment to provide support to conservation organizations and strengthen partnerships.

Strategy: Establish monitoring metrics to evaluate Department efforts that support conservation organizations and promote partnerships.

Objective: Develop new approaches to strengthen partnerships with private landowners and managers.

Strategy: Assess strengths and weaknesses of current methods of engaging private landowners and managers.

Strategy: Implement new approaches, such as landowner cooperatives, to improve conservation delivery.

Strategy: Establish monitoring metrics to evaluate effectiveness of new and existing public and private partnerships.

**Goal 5. A Shared Conservation Ethic** A conservation ethic that is shared by citizens, reflected in the identities of individuals and communities, and founded on the appreciation of healthy, abundant, and diverse natural resources.

## **Increasing Awareness**

Objective: Create an awareness of the value of Missouri's wetland systems and the importance of citizen involvement in conserving wetlands.

Strategy: Work with partners to assess and monitor public awareness and support for wetland conservation.

Strategy: Use results of assessments and monitoring to develop programs, multi-media communications, events, community resources, and school curricula that foster awareness of the benefits of wetlands and participation in conservation.

Strategy: Create greater awareness of the importance of hydrologic variability in wetlands, acceptance of stream-floodplain hydrologic connectivity, and the importance of wetlands for aquatic system health.

Strategy: Create a greater awareness of the importance of wetlands in sustaining wetland-dependent plants and animals and aquatic system health.

## **Identifying with Wetlands**

Objective: Maintain or increase the number of Missouri citizens and communities that have a strong connection to wetlands.

Strategy: Conduct periodic surveys of the general public, including birders and waterfowl hunters, to assess and monitor connections to wetlands.

Strategy: Identify points of common interest between individuals and groups engaged in promoting healthy food systems; carbon reduction; and water, land, and other environmental stewardship.

Strategy: Develop outreach and education tools focused on connecting Missourians with wetlands.

Strategy: Monitor and adjust outreach efforts to maintain or increase the number of Missourians who identify themselves as wetland conservationists, hunters, birders, and wildlife viewers.

## **Encouraging Recreation and Wetland Conservation**

Objective: Promote a conservation ethic among waterfowl hunters, birders, anglers, trappers, and others who enjoy wetland-associated recreation.

Strategy: Identify existing connections to wetland conservation that can be strengthened.

Strategy: Develop communication strategies to build upon the public’s existing connections with wetlands.

Strategy: Evaluate and then adapt communication strategies focused on strengthening the connections between wetland-associated recreation and conservation.

**Goal 6. Engaged Citizens** Citizens engaged in wetland-related recreation and conservation and a general public that supports the social and ecological benefits provided by wetlands.

### **Engaging New Audiences**

Objective: Invite new audiences to enjoy wetlands and participate in their conservation.

Strategy: Identify demographic segments of Missouri’s population that are receiving inadequate attention through Department wetland-related programs and activities.

Strategy: Develop approaches to encourage the enjoyment and conservation of wetlands by new audiences.

Strategy: Monitor and adjust these approaches accordingly to engage new audiences and encourage wetland conservation support.

### **Maintaining and Growing Traditional Audiences**

Objective: Maintain or increase participation in traditional wetland-related recreation.

Strategy: Maintain or increase the number of waterfowl hunters.

Strategy: Maintain or increase the number of wetland wildlife viewers.

Strategy: Participate in ongoing Department efforts focused on wetland recreation recruitment and retention.

### **Offering Quality Recreational Experiences**

Objective: Provide high-quality recreational experiences on wetlands.

Strategy: Identify the desires of new and traditional stakeholders in their recreational experiences on Department-managed wetlands.

Strategy: Provide a wide range of recreational experiences on Department-managed wetlands.



Strategy: Develop wetland restoration objectives that consider public-use expectations and recruitment and retention objectives.

Strategy: Evaluate resource impacts of public-use activities and conflicts between user groups.

## **Moving Forward through Implementation**

### **Guidelines for Implementation**

The Wetland Strategic Guidance Document describes the three primary guidelines for implementation of the Initiative. The guidelines provide the foundation for a new culture that engages a diversity of stakeholders at multiple scales and links the art and science of wetland management. The first guideline stresses a systems perspective, one that places emphasis on working with environmental processes rather than against them to create desired outcomes. The second guideline requires decision analysis, where time is taken to analyze decisions rigorously to capitalize on opportunities for learning and continuous improvement. The last guideline sets an expectation for enhanced coordination and collaboration among partners at local, regional, flyway, and continental scales.

### **Implementation across Scales**

Achieving the Initiative's desired outcomes will require scaling goals, objectives, and strategies to interstate, regional/wetland complex, and conservation area levels. In terms of interstate management, the Wetland Strategic Guidance Document will guide Department staff involved with Joint Venture, big river, and watershed management activities. In Missouri, it is expected that regional teams, similar to those established in the Initiative process, will develop regional/wetland complex plans to achieve the Initiative's mission, vision, and goals. Through this regional planning process, Department wetland managers will be charged with ensuring their budgets/operating plans support regional/wetland complex implementation plans.

### **Phases of Implementation**

Implementation of the Initiative will occur in a set-up phase, an implementation phase, and an adaptive phase (see Table 1). The set-up phase includes establishing internal Department teams as well as teams with partners to develop conceptual models, conduct assessments, and identify measurable objectives for each of the six Initiative goals. The Wetland Coordination Team has made substantial progress in the set-up phase. It has developed preliminary, conceptual models that reflect the Department's current understanding of the ecological and social systems critical to wetland conservation. These models help identify key components to assess in these systems.

The implementation phase will include recommendations for conservation actions, some of which will be made with partner participation and input. Many of these recommendations will include estimates of associated costs to the Department as well as staffing and equipment needs.

Recommendations can be grouped by the following descriptions:

- Restoration: Focus on the number of additional acres of specific wetland habitat types needed to meet Initiative goals.
- Renovation: Prioritize the timing and locations of major capital improvements to existing wetlands.
- Infrastructure: Focus on facilities, pumps, water control structures, and levees.
- Habitat management: Area-specific actions needed to meet wetland complex and broad-scale objectives on public and private lands.
- Outreach and education: Provide multi-media, school curricula, programs, and events to achieve Initiative goals and objectives.
- Public-use: Promote a wide range of recreational activities on Department managed wetlands.

The adaptive phase of implementation will include monitoring and adjusting management and conservation practices as more is learned through adaptive management and research. Area and statewide annual status reports that include results from coordinated monitoring will inform future management decisions. Wetland Reviews will provide the forum to discuss results, update models, and make recommendations for specific adaptive management efforts. Every five years, a more in-depth review will occur to inform an Implementation Plan update.

The three implementation phases (set-up, implementation, and adaptive) will provide opportunities to invite participation by experts representing a diversity of disciplines and management perspectives to facilitate learning from each other. Such learning opportunities will allow the Department and partners to strategically set objectives and implement management actions most likely to address limiting factors that influence the achievement of Initiative goals. Implementing the Initiative in an adaptive fashion will accelerate the pace of learning about the outcomes of management, allow for more transparent and effective communication of those outcomes, and provide the foundation from which to pass knowledge to future generations of wetland managers.

## Summary

The Wetland Implementation Plan will guide the Department in developing management and conservation actions under the Wetland Planning Initiative. The wetland conservation mission and vision will be achieved by taking a holistic approach to wetland conservation through the integration of three ecological and three social goals. Those goals reflect the Department's commitment to manage the wetlands it holds in public trust and to provide opportunities for Missourians to use and enjoy wetlands and understand the ecological and social values of these diverse habitats.

The objectives and strategies for the six goals will guide Department wetland management actions. They also will serve as the foundation from which the Department will engage stakeholders and partners in wetland conservation. Management actions will be determined by following the Initiative's three foundational guidelines: a systems perspective, decision analysis, and coordination and collaboration across multiple scales. The Department looks forward to working with stakeholders and partners to further refine, develop, and then implement the strategies outlined herein. The Department anticipates that working with stakeholders and partners will identify additional opportunities for wetland conservation.

Implementation of the Initiative will occur in three phases. The set-up phase includes establishing internal Department teams as well as teams with partners to develop conceptual models, conduct assessments, and identify measurable objectives for each of the six Initiative goals. The implementation phase will include recommendations for conservation actions, some of which will be made with partner participation and input. The adaptive phase will include monitoring and adjusting management and conservation practices as more is learned through adaptive management and research.

As a "living" document, the Wetland Implementation Plan will facilitate opportunities for the Department to engage partners and adjust our course to better achieve objectives of common interest. An integrated approach will enable the Department and partners to collectively achieve goals that cannot be achieved by one agency alone or through the management of individual conservation areas.

Implementing the Initiative will build upon past successes and usher in a new era of wetland conservation in Missouri; an era that embraces the challenge of providing quality wetlands for current and future generations of Missouri citizens.

**Table 1:** Draft Wetland Planning Initiative Implementation Schedule

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>SET UP PHASE WITH PARTNERS</b>																				
Model development	✓	✓	✓	✓	✓	✓	✓	✓												
Assessment	✓	✓	✓	✓	✓	✓	✓	✓												
Measurable objectives							✓	✓	✓	✓	✓	✓								
Monitoring metrics/schedule									✓	✓	✓	✓								
Team development	✓	✓	✓	✓																
Area and Wetland Complex Implementation Plans	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓								
<b>IMPLEMENTATION PHASE</b>																				
Restoration recommendations											✓	✓	✓	✓						
Renovation recommendations											✓	✓	✓	✓						
Infrastructure recommendations											✓	✓	✓	✓						
Habitat management recommendations											✓	✓	✓	✓						
Outreach, education, and communication recommendations											✓	✓	✓	✓						
Public-use recommendations											✓	✓	✓	✓						
<b>ADAPTIVE PHASE</b>																				
Annual status reports			✓				✓				✓				✓				✓	
Adaptive management											✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Five year review and implementation plan update																	✓	✓	✓	✓